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EXAMINER	
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ART UNIT	PAPER NUMBER
2128	

NOTIFICATION DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTOCommunications@hwdpatents.com

Office Action Summary	Application No.	Applicant(s)	
	10/789,262	DEITCH, MARTIN	
	Examiner	Art Unit	
	SHAMBHAVI PATEL	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 April 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-7,9-12 and 14-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-7,9-12 and 14-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to the Amendments/Remarks submitted 28 April 2008.

2. Claims 1, 2, 4-7, 9-12 and 14-22 have been presented for examination.

Response to Arguments

3. In view of Applicant's amendments and arguments, the 35 U.S.C. 112 rejection is withdrawn.

4. The objection to the specification is withdrawn.

5. Regarding the 35 U.S.C. 101 rejection:

i. **Applicant submits,** on page 12, that the term "outputting" is in itself a tangible result.

Examiner notes that it is unclear what is being outputted as a result. For example, claim 1 recites outputting a behavior of the modeling. However, the modeling comprises multiple steps, and the claim does not recite what final result is being outputted. Similarly, claim 16 recites outputting the modeled workload performance. However, the modeling comprises multiple steps, and the claim does not recite what final result is being outputted.

ii. **Applicant submits,** on page 13 of the remarks, that the medium can be in any from that is readable by a computer.

Examiner notes that because the claims specifically recite either a program product <u>stored</u> on a computer readable medium (claim 12) or a program product <u>stored</u> on a <u>recordable</u> medium (claim 19), they are statutory. The rejection is withdrawn.

iii. **Applicant submits** on page 12 of the remarks, "...that those claims are all drawn to the systems claimed...This system and those of claims 7 and 20 clearly produce a tangible, useful and concrete result."

Examiner notes that the rejection stated that the claims were nonstatutory because they were system claims that appear to be comprised solely of software elements. For example, page 11 of the specification states "It is understood that the systems, functions, mechanisms, method and modules described herein can be implemented in hardware, software, or a combination of both hardware and software". The rejection is maintained.

6. Applicant's arguments with respect to the prior art rejection have been considered but are not persuasive.

iv. **Applicant submit,** on page 13 of the remarks, that Rooney does not discuss the use of a resource percentage in order to determine a time slice percentage.

Examiner notes that the *process_using_samples* is calculated assuming there is no CPU delay. Thus, the LPAR has full access to the CPU resources.

v. **Applicant submits,** on page 13 of the remarks, that Rooney does not disclose a resource percentage.

Examiner notes that Rooney discloses calculating *maximum_demand_percentage*, which represents the total processor time (i.e. resources) that are available to a logical partition, assuming no delay.

vi. **Applicant submits,** on pages 13-14 of the remarks, that there is a lack of motivation for combining the Rooney and Buttlar references.

Examiner notes that the two are of analogous art, i.e. simulation of computer operations (see instant application and the introduction of the Buttlar reference).

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. **Claims 1, 2, 4-7, 9-12 and 14-22 are rejected under 35 U.S.C. 101** because the claimed invention is directed to non-statutory subject matter.

i. The Examiner asserts that the current state of the claim language is such that a reasonable interpretation of the claims would not result in any useful, concrete or tangible product. Regarding independent **claims 1 and 7,** the limitation "outputting the behavior of the modeling" is broad, and not necessarily statutory. The modeling involves multiple steps, and it is unclear which specific behavior is outputted.

ii. **Claims 7, 18 and 20** are system claims, but given their broadest reasonable interpretation, may comprise only software elements. Page 11 of the specification states "It is understood

that the systems, functions, mechanisms, method and modules described herein can be implemented in hardware, software, or a combination of both hardware and software".

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. **Claim(s) 1, 2, 4-7, 9-12, 14 and 15 are rejected under 35 U.S.C. 103(a)** as being unpatentable over **Rooney ('Intelligent Resource Director', 2002)** in view of **Kyne ('z/OS Intelligent Resource Director', 2001)** in view of **Buttlar ("z/CECSIM: An Efficient and Comprehensive Microcode Simulator for the IBM eServer z900"** 2002**).**

Regarding claim 1:

Rooney discloses a method for controlling a behavior of an LPAR (logical partition) in a computer operating in a time slice dispatch mode, comprising:

a. beginning a time interval **(page 572 'State Sampling')**
b. calculating a resource percentage representing a percentage of total resources allocated to the LPAR **(page 573 'Maximum Processor Demand' paragraph 2:** *maximum_demand_percentage***)**
c. calculating a time slice percentage for the LPAR based on the resource percentage and CP (central processor) data **(page 573 paragraph 1:** *processor_using_samples***)**
d. determining a CP (central processor) percentage representing a percentage of time that all physical CPs in the computer being modeled have been allocated to the LPAR **(page 572 'State Sampling').** Four times a second, every work unit in the system is sampled, to learn *where each service class is spending its time and how much each class is using each resource.*

Rooney does not explicitly disclose comparing the CP percentage and the slice percentage to then accordingly allocate resources. However, a skilled artisan would knowingly have included this functionality because if the required resources *(slice percentage)* are greater than the available resources *(CP percentage)*, then the CPs cannot be allocated to the LPAR.

Rooney does not explicitly disclose setting the resource percentage equal to 100% - a percentage of resources allocated to all other LPARs running in the simulated computer. **Kyne teaches** dividing the total amount of resources available (100%) among the LPARs running on the system **(Kyne: page 61 table at bottom of page).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Kyne because the method taught by Kyne provides the ability to drive a processor at 100% while providing acceptable response times for the critical applications, and ensures that all resources are utilized by the right workloads **(Kyne: page 4 1st paragraph).**

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney, Kyne and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claim 2:

Rooney discloses the method of claim 1, including the further step of repeating each of the recited steps for a next modeling interval. **(page 572 'State Sampling').** Four times a second, every work unit in the system is sampled, to learn *where each service class is spending its time and how much each class is using each resource.* Thus, the above process is repeated.

Regarding claim 4:

The combination of Rooney, Kyne and Buttlar teaches basing the percentage of resources allocated to other LPARs on a weighting factor specified for each LPAR **(Kyne: page 26 3rd paragraph),** a number of logical

CPs allocated to each LPAR **(Kyne: page 48 4th paragraph)**, and a MIPS value for each LPAR **(Kyne: page 61 table at bottom of page).**

Regarding claim 5:

The combination of Rooney, Kyne and Buttlar teaches the method of claim 4, wherein the MIPS value represents a maximum consumption that each LPAR could consume in an unrestrained processor **(Kyne: page 65 2nd paragraph).**

Regarding claim 6:

The combination of Rooney, Kyne and Buttlar teaches calculating the time slice percentage through the preceding equation **(Kyne: page 55).**

Regarding claim 7:

Rooney discloses a tool for controlling operation of a computer having a system for modeling a behavior of an LPAR operating in a time slice dispatch mode, the modeling system comprising:

a. a system for calculating a resource percentage representing a percentage of total resources allocated to the LPAR **(page 573 'Maximum Processor Demand' paragraph 2:** ***maximum_demand_percentage*****)**
b. a system for calculating a time slice percentage for the LPAR based on the resource percentage and CP (central processor) data **(page 573 paragraph 1:** ***processor_using_samples*****)**
c. a system for determining a CP (central processor) percentage representing a percentage of time that all physical CPs in the computer being modeled have been allocated to the LPAR **(page 572 'State Sampling').** Four times a second, every work unit in the system is sampled, to learn *where each service class is spending its time and how much each class is using each resource.*

Rooney does not explicitly disclose comparing the CP percentage and the slice percentage to then accordingly allocate resources. However, a skilled artisan would knowingly have included this functionality because

if the required resources *(slice percentage)* are greater than the available resources *(CP percentage)*, then the CPs cannot be allocated to the LPAR.

Rooney does not explicitly disclose setting the resource percentage equal to 100% - a percentage of resources allocated to all other LPARs running in the simulated computer. **Kyne teaches** dividing the total amount of resources available (100%) among the LPARs running on the system **(Kyne: page 61 table at bottom of page).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Kyne because the method taught by Kyne provides the ability to drive a processor at 100% while providing acceptable response times for the critical applications, and ensures that all resources are utilized by the right workloads **(Kyne: page 4 1st paragraph).**

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney, Kyne and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claim 9:

The combination of Rooney, Kyne and Buttlar teaches basing the percentage of resources allocated to other LPARs on a weighting factor specified for each LPAR **(Kyne: page 26 3rd paragraph),** a number of logical CPs allocated to each LPAR **(Kyne: page 48 4th paragraph)**, and a MIPS value for each LPAR **(Kyne: page 61 table at bottom of page).**

Regarding claim 10:

The combination of Rooney, Kyne and Buttlar teaches the tool of claim 9, wherein the MIPS value represents a maximum consumption that each LPAR could consume in an unrestrained processor **(Kyne: page 65 2nd paragraph).**

Regarding claim 11:

The combination of Rooney, Kyne and Buttlar teaches dividing the total amount of resources available (100%) among the LPARs running on the system **(Kyne: page 61 table at bottom of page).**

Regarding claim 12:

Rooney discloses a program product stored on a recordable medium for controlling a behavior of an LPAR in a computer operating in a time slice dispatch mode, comprising:

a. means for calculating a resource percentage representing a percentage of total resources allocated to the LPAR **(page 573 'Maximum Processor Demand' paragraph 2:** ***maximum_demand_percentage*****)**

b. means for calculating a time slice percentage for the LPAR based on the resource percentage and CP (central processor) data **(page 573 paragraph 1:** ***processor_using_samples*****)**

c. means for determining a CP (central processor) percentage representing a percentage of time that all physical CPs in the computer being modeled have been allocated to the LPAR **(page 572 'State Sampling').** Four times a second, every work unit in the system is sampled, to learn *where each service class is spending its time and how much each class is using each resource.*

Rooney does not explicitly disclose comparing the CP percentage and the slice percentage to then accordingly allocate resources. However, a skilled artisan would knowingly have included this functionality because if the required resources *(slice percentage)* are greater than the available resources *(CP percentage)*, then the CPs cannot be allocated to the LPAR.

Rooney does not explicitly disclose setting the resource percentage equal to 100% - a percentage of resources allocated to all other LPARs running in the simulated computer. **Kyne teaches** dividing the total amount of resources available (100%) among the LPARs running on the system **(Kyne: page 61 table at bottom of page).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Kyne because the method taught by Kyne provides the ability to drive a processor at 100% while providing acceptable response times for the critical applications, and ensures that all resources are utilized by the right workloads **(Kyne: page 4 1st paragraph).**

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney, Kyne and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claim 14:

The combination of Rooney, Kyne and Buttlar teaches basing the percentage of resources allocated to other LPARs on a weighting factor specified for each LPAR **(Kyne: page 26 3rd paragraph),** a number of logical CPs allocated to each LPAR **(Kyne: page 48 4th paragraph)**, and a MIPS value for each LPAR **(page 61 table at bottom of page).**

Regarding claim 15:

The combination of Rooney, Kyne and Buttlar teaches dividing the total amount of resources available (100%) among the LPARs running on the system **(Kyne: page 61 table at bottom of page).**

9. Claims 16-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rooney ('Intelligent Resource Director', 2002) in view of Buttlar ("z/CECSIM: An Efficient and Comprehensive Microcode Simulator for the IBM eServer z900"** 2002).

Regarding claim 16:

Rooney discloses a method for tracking workload performance of a plurality of LPARs in a computer, comprising

a. providing each LPAR specified in the computer, wherein each LPAR includes a defined consumption that is dependent on a consumption of the other LPARs **(page 575 2nd paragraph)**

b. setting an initial defined consumption for each LPAR, and running each LPAR and determining an observed consumption for each LPAR **(page 571 'WLM CPU weight-management configuration' 2nd paragraph** *initial weight* and *current weight***)**

c. comparing the observed consumption with the defined consumption for all of the LPAR **(page 575 'Receiver Processing' 1st paragraph).** The LPAR weight fix routine determines whether the receiver CPU delay bottleneck can be addressed by raising the partition processor weight *(consumption).*

d. for each LPAR that has an observed consumption that does not agree with the defined consumption, feeding the observed consumption back to the other LPAR **(page 575 'Donor Selection').** After it has been determined that the weight *(consumption)* of a service class needs to be increased, a donor whose weight *(consumption)* must be reduced as a result of this increase is selected.

e. adjusting the defined consumption of each LPAR based on the feedback **(page 576 'Donor Projections' 1st paragraph).** If a good trade is found, the partition weights of the receiver and donor are adjusted.

f. iteratively repeating the running, comparing, feeding and adjusting steps until the observed consumption agrees with the defined consumption for each LPAR. **(page 572 'Policy-adjustment framework').** This is repeated every ten seconds for every receiver class in need of resource allocation.

Rooney does not explicitly disclose simulating and modeling the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claim 17:

Rooney discloses the method of claim 16, wherein the consumption is a measure of processor resources consumed by each LPAR **(page 571 'WLM CPU weight-management configuration' 2nd paragraph).**

Regarding claim 18:

Rooney discloses a computer tool for tracking workload performance of a plurality of LPARs in a computer, comprising

a. a system for building each LPAR specified in the computer, wherein each LPAR includes a defined consumption that is dependent on a consumption of the other LPARs **(page 575 2nd paragraph)**

b. a system for running each LPAR and determining an observed consumption for each model **(page 571 'WLM CPU weight-management configuration' 2nd paragraph** *initial weight* and *current weight***)**

c. a system for comparing the observed consumption with the defined consumption for all of the LPAR **(page 575 'Receiver Processing' 1st paragraph).** The LPAR weight fix routine determines whether the receiver CPU delay bottleneck can be addressed by raising the partition processor weight *(consumption)*.

d. a system for feeding back the observed consumption to the other models from each LPAR that has an observed consumption that does not agree with the defined consumption **(page 575 'Donor Selection').** After it has been determined that the weight *(consumption)* of a service class needs to be increased, a donor whose weight *(consumption)* must be reduced as a result of this increase is selected.

e. a system for adjusting the defined consumption of each LPAR based on the feedback **(page 576 'Donor Projections' 1st paragraph).** If a good trade is found, the partition weights of the receiver and donor are adjusted.

f. a system for iteratively repeating the running, comparing, feeding and adjusting steps until the observed consumption agrees with the defined consumption for each LPAR. **(page 572 'Policy-**

adjustment framework'). This is repeated every ten seconds for every receiver class in need of resource allocation.

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claim 19:

Rooney discloses a program product stored on a recordable medium for tracking workload performance of a plurality of LPARs in a computer, comprising

a. means each LPAR specified in the computer, wherein each LPAR includes a defined consumption that is dependent on a consumption of the other LPARs **(page 575 2nd paragraph)**
b. means for running each model and determining an observed consumption for each LPAR **(page 571 'WLM CPU weight-management configuration' 2nd paragraph** *initial weight* and *current weight***)**
c. means for comparing the observed consumption with the defined consumption for all of the LPAR **(page 575 'Receiver Processing' 1st paragraph).** The LPAR weight fix routine determines whether the receiver CPU delay bottleneck can be addressed by raising the partition processor weight *(consumption)*.
d. means for feeding back the observed consumption to the other LPAR from each LPAR that has an observed consumption that does not agree with the defined consumption **(page 575 'Donor Selection').** After it has been determined that the weight *(consumption)* of a service class needs to be increased, a donor whose weight *(consumption)* must be reduced as a result of this increase is selected.

e. means for adjusting the defined consumption of each LPAR based on the feedback **(page 576 'Donor Projections' 1st paragraph).** If a good trade is found, the partition weights of the receiver and donor are adjusted

f. means for iteratively repeating the running, comparing, feeding and adjusting steps until the observed consumption agrees with the defined consumption for each LPAR. **(page 572 'Policy-adjustment framework').** This is repeated every ten seconds for every receiver class in need of resource allocation.

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Buttlar because tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Regarding claims 20-22:

Rooney discloses a computer tool for controlling LPAR behavior comprising:

a. means for calculating a resource percentage representing a percentage of total resources allocated to the LPAR **(page 573 'Maximum Processor Demand' paragraph 2: *maximum_demand_percentage*)**

b. means for calculating a time slice percentage for the LPAR based on the resource percentage **(page 573 paragraph 1: *processor_using_samples*)**

c. means for determining a CP (central processor) percentage representing a percentage of time that all physical CPs in the computer being modeled have been allocated to the LPAR **(page 572 'State Sampling').** Four times a second, every work unit in the system is sampled, to learn *where each service class is spending its time and how much each class is using each resource.*

d. means for building each LPAR specified in the computer simulation, wherein each LPAR includes a defined consumption that is dependent on a consumption of the other LPARs **(page 575 2nd paragraph)**

e. means for running each LPAR and determining an observed consumption for each LPAR **(page 571 'WLM CPU weight-management configuration' 2nd paragraph** *initial weight* and *current weight***)**

f. means for comparing the observed consumption with the defined consumption for all of the LPAR **(page 575 'Receiver Processing' 1st paragraph).** The LPAR weight fix routine determines whether the receiver CPU delay bottleneck can be addressed by raising the partition processor weight *(consumption)*.

g. means for feeding back the observed consumption to the other models from each LPAR that has an observed consumption that does not agree with the defined consumption **(page 575 'Donor Selection').** After it has been determined that the weight *(consumption)* of a service class needs to be increased, a donor whose weight *(consumption)* must be reduced as a result of this increase is selected.

h. means for adjusting the defined consumption of each LPAR based on the feedback **(page 576 'Donor Projections' 1st paragraph).** If a good trade is found, the partition weights of the receiver and donor are adjusted

i. means for iteratively repeating the running, comparing, feeding and adjusting steps until the observed consumption agrees with the defined consumption for each LPAR. **(page 572 'Policy-adjustment framework').** This is repeated every ten seconds for every receiver class in need of resource allocation.

Rooney does not explicitly disclose comparing the CP percentage and the slice percentage to then accordingly allocate resources. However, a skilled artisan would knowingly have included this functionality because if the required resources *(slice percentage)* are greater than the available resources *(CP percentage)*, then the CPs cannot be allocated to the LPAR.

Rooney does not explicitly disclose simulating the method above. **Buttlar teaches** the verification of LPAR management software in a simulation environment **(Buttlar: paragraph 1).** At the time of the invention, it would have been obvious to one of ordinary skill in the art to combine the teachings of Rooney and Buttlar because

tight development schedules and a very limited supply of expensive engineering hardware make this type of verification desirable **(Buttlar 1st paragraph).**

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Examiner's Note: Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in their entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner. In the case of amending the claimed invention, Applicant is respectfully requested to indicate the portion(s) of the specification which dictate(s) the structure relied on for proper interpretation and also to verify and ascertain the metes and bounds of the claimed invention

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shambhavi Patel whose telephone number is (571) 272-5877. The examiner can normally be reached on Monday-Friday, 8:00 am – 4:30 pm.

11. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SKP

/Michael D Masinick/

Primary Examiner, Art Unit 2128